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Research Article

Outdoor education program: Assessing student performance, mental health, and teacher well-being

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Initiatives for outdoor education have gained popularity because of their capacity to boost teacher well-being, foster better mental health in instructors, and enrich the learning environment for students. We demonstrate the influence that outside education programs have on the achievement of students and how they create a vivid tapestry of hands-on experience that speeds up academic attainment through a thorough investigation of their educational achievement. Additionally, we investigate the important consequences for the mental wellness of students as well as the ways in which these programs support emotional health, self-worth, and stress reduction. This study contributes uniquely to the subject of education by highlighting the importance of educators especially and their critical role as facilitators of learning. The purpose of the research was to determine the relationship between students' well-being and academic performance and learning outdoors. The study looked into how instructors' well-being affected students' well-being and achievement in order to achieve this goal. The demographic group that is focused on consists of teachers, learners from intermediate school, supplementary, and college grades, as well as pertinent student data from various Chinese schools and institutions. With the use of Smart PLS, a modified *least square structural equation modeling* procedure was applied to the information collected from 250 participants. The study's findings are extremely pertinent to the field of education and offer a plethora of information to practitioners, decision-makers, and organizations. By understanding the major effect of outdoor education initiatives, we seek to provide the groundwork for innovative educational practices and policies that empower students, support instructors, and have long-lasting consequences. Further research is needed to identify more factors that improve academic achievement and wellness among students.

Keywords: Outdoor education; Program evaluation; Students' academic performance; Students' health and engagement; Teachers' well-being

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1. Introduction

The cornerstone of social teaching and learning is that students learn from their peers at the same academic level. The discussion and the group works are teaching practices experienced by the students which they think effective in linking conceptual learning to real-life experiences (Insorio,

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2021). In addition to acting as facilitators, teachers also arbitrate how students' experiences are shaped (Taniguchi et al., 2007). The limited amount of private time that that instructors and pupils can spend shared, the protracted comments learners receive, and the restrictions on the instructional materials and tools that instructors can create in the classroom all require a broader viewpoint on learning outdoors to be balanced. The most compelling reason in support of integrated learning's growth maybe that it provides an alluring alternative option for pupils who desire the flexibility of remote learning but also want to connect with instructors and other learners in an educational environment. There are many better possibilities for both educators and pupils as a result of blended instruction, which crosses cultural, geographical, and chronological boundaries (Vernadakis et al., 2012).

College pupils are increasingly experiencing a wider range and more severe mental health issues. According to two longitudinal investigations, high- school instructors who were confident in their ability to diagnose mobility issues were relevant. applying internal focus techniques and value to consider methods that prioritize student connection and instruction (Zee & Koomen, 2016). In the rapidly evolving area of education, a growing amount of research is demonstrating the substantial benefits that outdoor education programs have on learners' educational achievement and mental wellness. These kinds of events offer great educational possibilities outside of traditional classroom the walls, often taking place in outdoor settings (Aslan & Arabacı, 2023). Within this potentially revolutionary framework, the psychological health of teachers emerges as a significant, if understudied, mediating aspect in the learning experience. According to Allen-Craig and McLeod (2004), the term "outdoor education" in the present research implies the use of natural environments to promote and enable psychological and educational improvements. The adult participants who are generative in this research are mostly mentors, teachers, leaders, and meaning-keepers. Because of their elevated status in society, it is both a political and practical obligation to protect educators' health. The educational literature has examined teachers' generating talents, showing how their own success and well-being impact students' own. It has been shown that students do more academically under the guidance of positive instructors who exhibit grit, life contentment, and an optimistic explanation style. These teachers are also more effective. Moreover, research has shown that favorable feelings experienced by instructors influence their motivations and actions (Branand & Nakamura, 2017). The evaluation of schooling has steadily improved recently. An evaluation of pupil achievement in colleges and universities has become a critical and significant component. Higher education committees assess the quality of instruction with the goal of raising student achievement. These groups focus closely on students' achievement in school based on assessment components. Assessment is the most important element of the setting for learning and instruction and the center of the educational method. With evaluation, experts can show students' growth and achievements and spot new patterns in education. Teachers can also receive feedback during their evaluation process thanks to evaluation (Zughoul et al., 2018).

This paper seeks to understand the relationships that exist between student participation in outdoor activities and their achievement in school, emotional well-being, and sense of self. The study also acknowledges teachers as important middlemen and assesses their psychological and emotional health and how it may affect the experiences of their pupils. The study aims to both promote additional investigation in the field and provide helpful recommendations and implications for improving environmental education methods because ethical considerations are so essential. In summary, the study aims at 1) assessing the impact of specific outdoor education activities on students' academic performance, considering the mediating role of teachers' well-being, and 2) examining the relationship between students' health and engagement outcomes in outdoor education and the mediating influence of teachers' well-being.

2. Literature Review

Reviewing the literature on outdoor education helps to set the scene, identify research gaps, and encourage the formulation of research hypotheses by providing an overview of the body of information about the effects of outdoor education programs.

2.1. Outdoor Education

Outdoor education is employed in the present research to describe the application of nature-based learning to support and facilitate behavioral and cognitive transformation and development. According to McLeod and Allen-craig (2007), it constitutes education that is directed by meaningful experience and puts participants in challenging and demanding circumstances for which diligence, dedication, collaboration, and independence are essential. Braun and Dierkes (2016) conducted a few thorough studies that looked at the key developmental phases of a person's life whenever nature connection may be most successfully encouraged. Numerous research projects have been undertaken to investigate how the outdoor learning experience affects participants' social and personal growth. An outdoor education program is defined as one that increases participants' capacity to contribute to a demanding setting while using nature as an educational setting. Programs that regularly expose participants to outdoor adventure activities in order to support mutual growth and business typically structured with preset priorities and aims (Samsudin et al., 2019).

2.2. Students' Academic Performance

A fascinating field of study focuses on understanding and interpreting educational data about students that shows how well they performed in school and developing certain guidelines, categories, and forecasts to help learners with their future studies. By using this recently found data, teachers may identify students who may be underachievers at the beginning of a semester or year and provide them extra attention to help them succeed in their studies (Abu, 2016). If learners wanted to appear competent in the classroom and content with school in broad terms, they would probably benefit from the social assistance offered in the school environment. Teachers, parents, and other students are examples of social support networks connected to schools. These people interact with children on a regular basis, and their impact on their academic achievement and school satisfaction might vary. Since peer and teacher contacts are the nearest in the school setting, it is expected that school happiness would be more responsive to perceived social support from these sources (Danielson et al., 2017). When information and skills are applied practically, learning is significantly enhanced, and the learner benefits from the applied knowledge and skills; sometimes, self-discovery involves trial and error. The use of implicit and applied knowledge should be the long-term objective of the system of schooling. According to Chauhan (2019), a conventional classroom arrangement in which the teacher delivers a presentation and then a lecture does not promote student engagement or elevate the required level of student engagement.

2.3. Students' Health and Engagement

Students at college are particularly susceptible to stress because of the transitory nature of their studies. Most of them struggle with stress because of a range of school-related responsibilities, limited resources, and ineffective time management. Earlier studies found that first-year college students were more vulnerable to stress due to the inherent strain and disruption of balancing new responsibilities and unusual circumstances. Additionally, they lack the social support networks and coping skills needed to handle college stress. Among the four components of the paradigm are opinions on fragility, severity, benefits, and obstacles. A person's perception of the difficulty level and empathy play a significant role in changing their medical search habits and behavior (or claimed risk, which is the result of the combination of both of these elements) as well as their conviction that safety actions have advantages (i.e., the benefits intended are greater than the claimed barriers) (Von Ah et al., 2004). The preliminary study that shows that efforts to support

students' overall development and well-being also help their academic achievement provides the secure proof. A comprehensive research found that curriculum-based teaching and well-designed school environments, together with integrated school health initiatives aimed at improving health, positively affect academic attainment (Moore & Anderson, 2014). It is expected of teachers in schools to take on a greater role in identifying and connecting youth experiencing mental health difficulties with appropriate supports. Previous studies have shown a correlation between instructors offering their pupils more emotional support and a decline in the behavioral problems and symptoms of depression ratings of their students (Shelemy et al., 2019).

2.4. Teachers' Well-being

The aforementioned literature analysis highlights the need of examining the characteristics of teachers that are connected to specific to the setting mindsets, views, traits, and behaviours that promote strong student relationships and a positive atmosphere for learning in the classroom. To this end, the current study examined early childhood educators' self-reported health, mindfulness, and self-compassion in relation to observational measurements of classroom excellence and their opinions regarding a challenging student as disclosed in a semi-structured interview (Jennings, 2015). Finding the elements that influence teachers' well-being and happiness aids in determining their career pathways and contributes to the creation of work conditions in schools that promote a commitment to the teaching profession and reduce turnover. Teachers have to cope with challenges in the classroom since they have to deal with changes on a daily basis. The well-being and happiness of teachers for long-term performance are affected by these changes. High accountability, rigorous learning environments that need to prepare students for their futures, and the frequent implementation of fresh ideas in classrooms are a few of them. Recognizing one's shortcomings and taking corrective action are essential components of being a complete and happy educator. Teacher preparation programs must have specialized curriculum that looks at teachers' psychological agency, resilience, and sense of self as individuals and as professionals (Price & Mccallum, 2015).

3. Background

3.1. The Effect of Students' Academic Performance and Students' Health and Engagement on Outdoor Education

This research looks at how outdoor education affects pupil achievement in school as well as their overall health, which includes their emotional and physical wellness. Drawing from previous research that links experiences in nature-based learning to better psychological well-being, reduced stress, increased self-worth, and enhanced cognitive abilities, the study suggests that outdoor education can benefit students' academic achievement in addition to their health. In addition to the learning component, outdoor education includes experiential instruction and setting components since it is mostly performed outdoors. It also discusses the idea of senses as well as how they are used in all of its many aspects and realms. The emphasis on the senses in outdoor education has started to increase, but this view is based on the emotions that one experiences in such environments, on factual inquiry, and on the dualistic character of the causal connections that arise from different "outdoor activities" (Mindrescu et al., 2022).

We hypothesized that students' purported understanding of active minds would vary based on their level of fundamental acquaintance and participation. There may be wide variations in the impact on the pupil's psychological well-being behavior and views. Specifically, we anticipated that students with high baseline inclination and active minds would be less likely to demonstrate noteworthy gains as their knowledge over the school year, as opposed to learners with low baseline inclination and inclusion levels. Helpful conduct is more prevalent, and stigma is lessened through cooperative learning (Sontag-padilla et al., 2018). The link between educational attainment and well-being has not received much attention in the literature, despite the fact that teacher compensation and education levels have long been contentious concerns. It seems meaningful that

education and the health of teachers should go hand in hand. This topic has received more attention, but it hasn't addressed the well-being of teachers or the consequences of new state and federal regulations requiring preschool instructors to have a higher level of education (Bullough et al., 2014).

3.3. Teachers' Well-being as a Mediator

Within the field of education, the notion that an educator's emotional and mental well-being may serve as a mediator between various educational features or interventions and student outcomes is referred to as "teachers' wellness as a mediator." In essence, the well-being of teachers serves as a moderating element that may influence the way in which children are affected by other variables. Even though teaching is one of the most rewarding and challenging professions, nationwide surveys consistently rank it among the most stressful occupations. Persistent issues in the field of education, such as teacher fatigue and burnout, lead to poor student outcomes. By putting their health at risk, burnout may have a serious negative impact on teachers' relationships with pupils and the quality of their job. More specifically, research has shown that teachers who experience high levels of stress while at work are more likely to have mental, emotional, and social problems that impair their capacity to instruct students successfully (Cook et al., 2017). In addition to achieving the intended learning results, the instructional processes that occur within educational institutions may also leave individuals feeling empowered, fulfilled, and/or stressed. The effectiveness of educational activities as pedagogical practices may be determined by how much they promote the learning and well-being of both instructors and students. The pedagogical well-being of teachers is a vital component of their occupational well-being, together with leadership in the classroom, consistency, workload, and resources. In contrast, under adverse circumstances, educators may find it increasingly challenging to collaborate with parents due to their action-oriented coping strategies and avoiding or defensive tactics. This could have a major negative impact on students' attitudes toward acquiring as well as teachers' professional health (Zhang et al., 2018).

A better understanding of the connections among teacher well-being, student achievementand student health may assist direct recommendations for maintaining and enhancing the learning atmosphere. It also highlights how important it is to provide teachers with strategies and resources to help them get beyond barriers caused by worries for the well-being and academic achievement of their children. Further research in this area is strongly encouraged in order to have a greater understanding of the complex relationships between these elements and how they impact the educational environment. Consequently, the study focuses on the frame outlined in Figure 1 and examines the following hypotheses.

H1: There is a relationship among students' academic performance and outdoor education.

H2: There is a relationship among students' health and engagement and outdoor education.

H3: There is a relationship among students' academic performance and teachers' well-being.

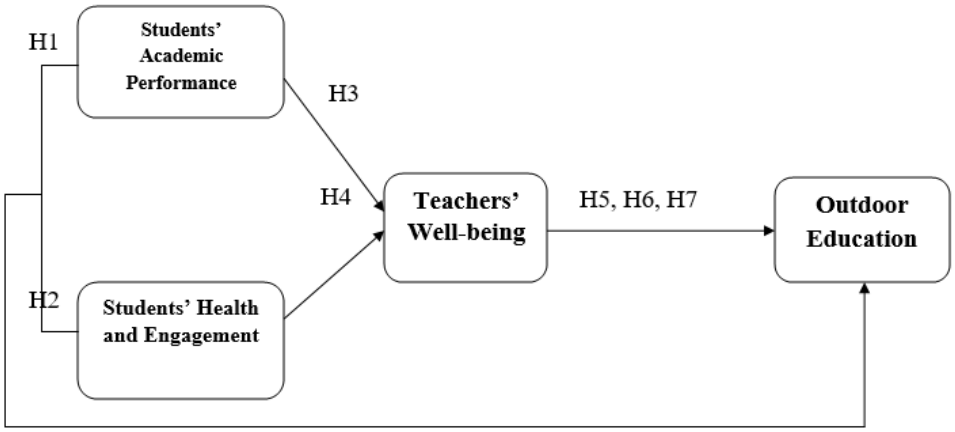
H4: There is a relationship among students' health and engagement and teachers' well-being.

H5: There is a relationship among teachers' well-being and outdoor education.

H6: Teachers' well-being mediates the relationship among students' academic performance and outdoor education.

H7: Teachers' well-being mediates the relationship among Students' health and engagement and outdoor education.

Figure 1
Conceptual background of the study



4. Method

4.1. Research Design

This research uses a quantitative method and adopts the logical method to test hypotheses and to establish the relationship between different variables. This approach helps to minimize bias as the surveys are self-administered to the respondents. The method employed was structural equation modelling [SEM], which utilizes Partial Least Squares [PLS], which is favorable in social science and business research (Nitzl et al., 2016).

4.2. Participants

Teachers, their school records, and students of intermediate, secondary, and college were the population of the study. Participants had been recruited using the convenience sampling technique. Dissemination of questionnaires involved, distributing 300 questionnaires for the participants and 250 questionnaires were filled by the respondents. Study participants were asked to complete questionnaires whereby they provided demographic data and ratings comparable to the constructs explored in the research.

4.3. Data Collection

To gather required data, an online questionnaire was developed for this research independently. To conduct the survey, the questions were grouped into two parts. The first part of the questionnaire focused on the demographic parameters, for example, gender of the students. Thus, the second section focused on the constructs that were employed in the study and consisted of twenty items completed on 5-point Likert scale, as suggested by Sachdev and Verma (2004). The process of data collection was uncomplicated and lasted for five to six weeks, but some responses were followed by emails in order to encourage the recipients to complete the questionnaire.

4.4. Data Analysis

The data analysis was conducted through the Structural Equation Modeling employing the Partial Least Square mode. Nitzl et al. (2016) also highlight that the application of this variance-based method is appropriate in social sciences and management research. The information from the questionnaires was collected back and the collected data was analyzed. Validity and reliability tests were also performed to determine if the data conformed to normal distribution, which is a prerequisite before performing SEM analysis. The level of the answers was raised with the help of the 5-point Likert scale, which helped to increase the response rate and the quality of the data received (Babakus & Mangold, 1992). The constructs being investigated in the study included the academic performance of students (Hijazi & Naqvi, 2006), health and interest (Atkins et al., 2010),

the value of outdoor learning (Samsudin et al., 2019), and the state of emotional and psychological well-being of instructors (Dreer, 2021).

5. Findings

5.1. Measurement Model

Using Smart PLS software, variance-based structural equation modeling was performed in this investigation. Composite reliability and Cronbach alpha have been employed to examine the validity and reliability of the variables (see Figure 2 and Table 1). Conversely, tests have been conducted on convergent validity (variance inflation factor, average variance extracted, and factor loadings) (Sarstedt et al., 2014) and discriminant validity (HTMT Ration and Fornell and Larcker Criteria) (Fornell & Larcker, 1981).

Table1
Construct reliability and validity

Construct	*Items*	*Outer loading*	*VIF*	*a*	*rho_A*	*CR*	*AVE*
Outdoor Education				0.754	0.813	0.837	0.525
	OE1	0.820	1.921				
	OE2	0.788	1.816				
	OE3	0.613	1.072				
	OE4	0.800	1.667				
	OE5	0.772	1.604				
Students' Health				0.802	0.812	0.866	0.568
	SH1	0.541	1.135				
	SH2	0.794	1.702				
	SH3	0.768	1.756				
	SH4	0.845	2.127				
	SH5	0.782	1.894				
Students’ Performance				0.749	0.766	0.833	0.507
	SP1	0.662	1.254				
	SP2	0.795	1.781				
	SP3	0.788	1.707				
	SP4	0.771	1.764				
	SP5	0.498	1.158				
Teachers’ Well-being				0.861	0.863	0.900	0.644
	TW1	0.764	1.828				
	TW2	0.837	2.255				
	TW3	0.820	2.095				
	TW4	0.782	1.953				
	TW5	0.807	1.939				

5.2. Discriminant Validity

The current study has employed discriminant validity in addition to convergent validity. The discriminant validity in the current study has been assessed using two tests: the HTMT (Heterortrait-Monotrait) ratio and the Fornell and Larcker criterion. If the value at the top of each column is greater than the values in the remaining columns, the Fornell and Larcker test indicates importance (Fornell & Larcker, 1981). According to Ab Hamid et al. (2017), it is generally recommended to assess the discriminant validity of AVE recovered with a score of 0.50 or above. It is demonstrated that there is no discriminant validity if an HTMT value of 1, which denotes acceptance of the null hypothesis, is found (Sarstedt et al., 2014). Accordingly, Table 2 summarizes the variables' average variance [AVE] as follows: teachers' well-being [TW] = 0.882; students' academic success [SP] = 0.862; students' health and engagement [SH] = 0.874; and outdoor education [OE] = 0.825. The variables' average variance exponent is as follows: students' health

and engagement [SH] = 0.855, students' academic success [SP]= 0.851, and teachers' well-being [TW] = 0.867. Table 3 illustrates the discriminant validity (Heterotrait-Monotrait Ratio).

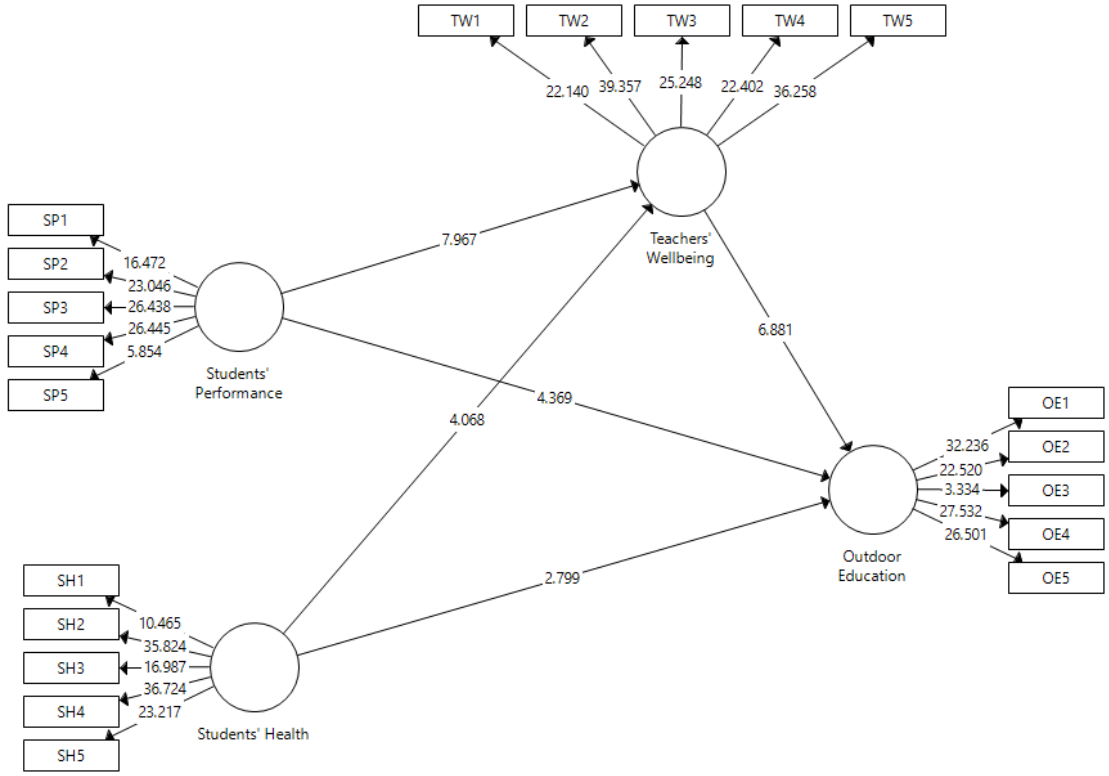
Table 2
Discriminant Validity (Fornell-Larcker Criterion)

	Outdoor education	*Students' health and engagement*	*Students' academic performance*	*Teachers' well-being*
Outdoor education	0.825			
Students' health and engagement	0.883	0.874		
Students' academic performance	0.869	0.897	0.862	
Teachers' well-being	0.844	0.889	0.823	0.882

Table 3
Discriminant Validity (Heterotrait-Monotrait Ratio)

	Outdoor education	*Students' health and engagement*	*Students' academic performance*	*Teachers' well-being*
Outdoor education				
Students' health and engagement	0.855			
Students' academic performance	0.807	0.851		
Teachers' well-being	0.849	0.668	0.867	

Figure 1
Measurement Model



5.3. Structural Equation Model

The structural model route data was demonstrated to be statistically significant using the PLS-SEM boot strapping approach. The hypothesis that students' mental health and academic perfomance are good predictors of psychological well-being and outdoor education is supported by experimental evidence. Table 3 and Figure 3, which display the direct effect results and SEM results, illustrate this.

Table 4
Direct effect hypothesis results

Hypothesis	*Direct relationship*	*Beta*	*SE*	*p*	F^2	R^2
H1	Students' health and engagement → Outdoor Education	0.063	2.799	.005	0.233	0.558
H2	Students' health and engagement → Teachers' Well-being	0.065	4.068	<.01		
H3	Students' academic performance → Outdoor Education	0.059	4.369	<.01		
H4	Students' academic performance → Teachers' Well-being	0.057	7.967	<.01		
H5	Teachers' Well-being → Outdoor Education	0.062	6.881	<.01		

Table 4 displays the hypothesis outcomes based on the data. The relationship between outdoor education, student involvement, and health is statistically significant (t = 0.063, p = .005). Thus, the first hypothesis is reasonable. The results of a PLS-SEM investigation show a significant relationship between instructors' well-being and students' health and engagement (t = 0.065, p < .01). As a consequence, second hypothesis of the study was shown to be true statistically. There is a statistically significant correlation between outdoor education and students' academic achievement (t = 0.059, p < .01). As a result, the third hypothesis is accepted. One of the four hypotheses examined in this research was the importance of the relationships between instructors' well-being and students' academic achievement (t = 0.057, p < .01). As a result, the fourth hypothesis is validated. The importance of relationships between outdoor education and teachers' well-being (t = 0.062, p < .01). Consequently, there is support for the fifth hypothesis.

5.4. Quality Criteria

According to Hair et al. (2017), R square (R^2) calculates the percentage of an endogenous construct's variation that can be explained by its predictor constructs. For small, medium, and big values, the ranges [0.25, 0.50, and 0.75] are used. Figure 2 shows the outcome that was obtained. Particularly for the exogenous latent variable, the PLS algorithm's Smart-PLS method facilitates the collection of data for small, medium, and high impact sizes, or [0.02, 0.15, 0.35] (Cohen, 1992). R-square value was found to be .558 for outdoor education which refers that the model explains 55.8% of how outdoor education changes by using students' health and engagement, students' academic performance and teachers' well-being.

4.5 Mediation Analysis

In mediation analysis, an indirect relationship is created even when students' performance and health are directly impacted by instructors' well-being (see Table 6). Bootstrapping is used to investigate the indirect effects of variables (Zhao et al., 2010). There is a connection between outdoor education, student involvement, academic achievement, and teacher well-being (Hair et

al., 2017). Because of the substantial link of mediation, the study's findings indicated that the mediating hypotheses H6 and H7 were accepted.

Figure 2
Structural model

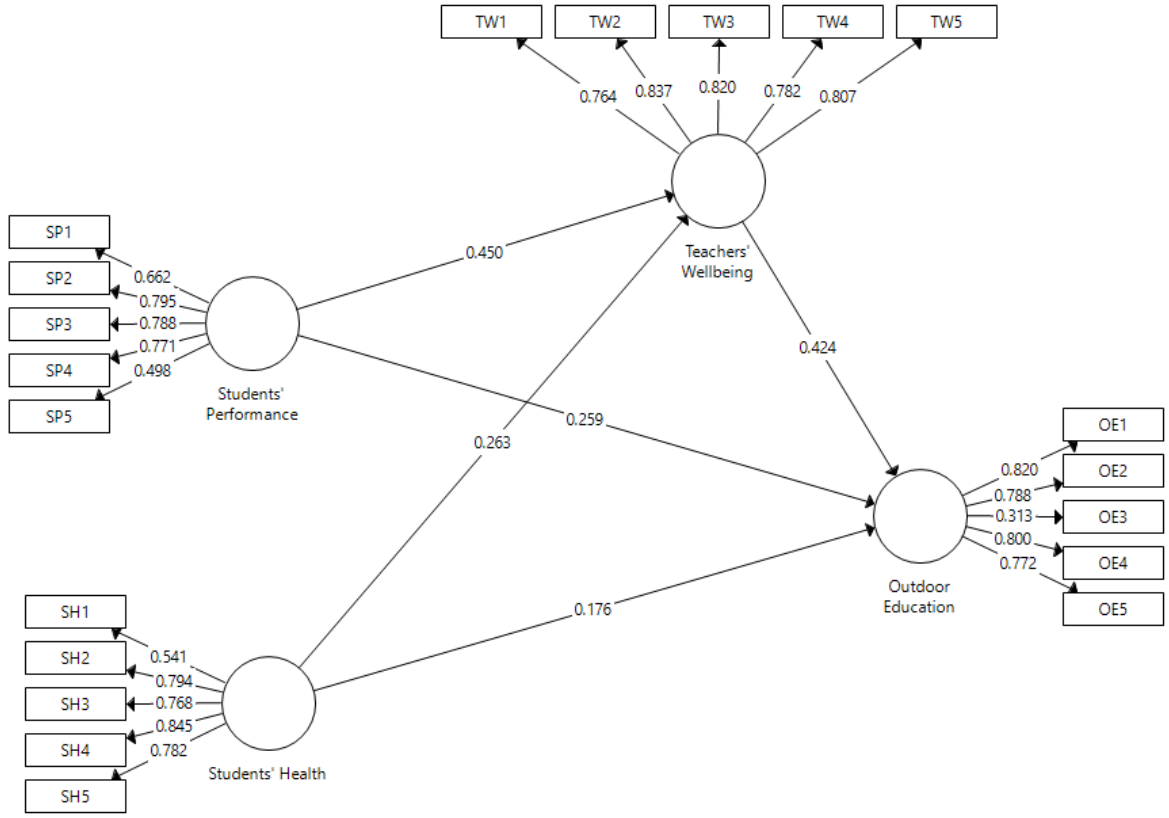


Table 6
Mediation analysis

Hypothesis	*Indirect relationship*	*Beta*	*SD*	*t*	*p*
H6	Students' health and engagement → Teachers' Well-being → Outdoor Education	0.112	3.825	3.825	< .01
H7	Students' academic performance →Teachers' Well-being → Outdoor Education	0.191	4.750	4.750	< .01

Table 7 presents correlation coefficients reflecting relationships between outdoor education, students' health and engagement, students' academic performance, and teachers' well-being. Positive values suggest that as outdoor education increases, a corresponding increase in students' health and engagement, academic performance, and teachers' well-being exist. The strength and direction of these relationships are indicated by the numerical values, with higher coefficients indicating stronger correlations.

Table 7
Path Coefficient

	OE	*SHE*	*SAP*	*TW*
OE				
SHE	0.176			0.263
SAP	0.259			0.450
TW	0.424			

Note. OE: Outdoor education; SHE: Students' health and engagement; SAP: Students' academic performance; TW: Teachers' Well-being.

6. Discussion

This study examined the relationships between students' academic achievement, health, and outdoor education. For this purpose, data was collected from teachers and students. The results indicate a relationship with positive correlation among students' academic achievement, health, and outdoor education. This study discusses key findings and their implications from research on the effects of students' health, engagement, and performance on teachers' well-being. According to Edwards (2003), complex relationships between these factors shed light on the complex dynamics within the educational environment. Academic achievement is determined by how well students perform on exams and assignments and how much knowledge and skills increase (Honicke & Broadbent, 2016). Students' academic achievement are the outcome of their education. In other words, it is a measure of how well an educator, student, or institution has met their educational obligations (Dogan, 2017). When their students succeed academically, teachers tend to feel less stressed and more satisfied with their work. This correlation supports previous research showing teachers feel successful and effective when students perform well (Price & Mccallum, 2015).

Examining the connection between instructors' well-being and students' health and engagement was the study's immediate outcome. Further analysis of the data reveals that instructors' well-being is significantly and favorably impacted by students' academic achievement and health. These findings emphasize how important it is to recognize that teachers' emotional well-being both influences and modifies their students' academic success (Moore & Anderson, 2014). The impact of children's health on teachers' welfare was also examined in this study. This association is in line with studies showing how important it is to create a classroom environment that promotes children's health and, consequently, improves the well-being of teachers. The research highlights the interdependence of these components within the educational framework (Mindrescu et al., 2022). The performance in school is one of the outcomes of education. The role that educators, instructors, and institutions play in helping students meet learning objectives and gauge their academic success. Educational performance is measured by exams and other evaluation methods including continuous diagnosis. Students' performance is influenced by a variety of factors, including their mental state, IQ, personality, interests, level of hard effort, enthusiasm, and confidence, as well as parental guidance, curriculum activities, teaching strategies, and motivation from teachers. It is impossible to undervalue the advantages of socializing for academic achievement (Braun & Dierkes, 2016).

The unintended consequences of teacher well-being's role as a mediator in the learning process. It was found that instructors' well-being, which acts as a mediator in this respect, influences the link between students' academic performance, health, and overall educational outcomes (Cook et al., 2017). Teachers who are in better health are more likely to assist students in having rewarding educational experiences. The idea of teacher effectiveness, which stresses that emotionally healthy and content instructors are more productive in the classroom, which improves student results, is congruent with this. According to Bogner (2002), the study emphasizes the significance of teacher well-being as a crucial piece of the educational puzzle. What we mean by "alleged teacher support" is what we mean when we discuss students' opinions that their instructors are available to them in times of need and care about them. The word "teachers' support" refers to a variety of factors, according to earlier research (Chong et al., 2018; Lei et al., 2018; Liu et al., 2021). The four key areas in which instructors need help are academic, emotional, instrumental, and autonomy. Students often see their teachers favourably when they are more engaged, appreciative, put out more effort, and like their coursework (Pitzer & Skinner, 2017; Tang & Lam, 2014; Yu & Singh, 2018). Additionally, they are likely to have a more favourable perception of themselves in the classroom (Martin & Rimm-Kaufman, 2015) and have a high chance of succeeding in their academic endeavours (Zhang et al., 2018). The motivation to follow classroom rules and the use of self-regulated learning techniques (Lei et al., 2018) are both positively correlated with students' perceptions of their teachers as helpful.

7. Implications

7.1. Theoretical Implications

The deep theoretical ramifications of this work extend beyond conventional educational paradigms. It emphasizes the significance of an all-encompassing educational framework that incorporates outside education, student performance between the student's mental health and the teacher's well-being, and accountability for the intricate relationship. The study backs a more integrated approach to schooling, challenging conceptions of mitigation. Additionally, it emphasizes how crucial teacher well-being is in educational settings that support social and emotional learning theories. It highlights how teachers' emotional states have a substantial impact on the classroom atmosphere and the experiences of students, which broadens our comprehension of the connection between teacher well-being and academic results. Furthermore, research supports experimental learning theories by demonstrating the value of learning through hands-on activities, particularly in natural environments. The study is consistent with environmental psychology theories, which emphasize the importance of the environment in education and the beneficial impacts of the natural world on human well-being. The research also presents an arbitration approach to education, which includes external education and emphasizes teachers' well-being as a mediator between students' mental health and academic success. This method exposes the intricate, interrelated nature of these variables and challenges linear theories. Lastly, the findings support the importance of well-being in the educational process and policy because they align with ideas of positive psychology and wellness, teacher welfare, and student outcomes. They also reinforce the relationships between the various educational standards.

To put it briefly, these theoretical ramifications contribute to a more thorough comprehension of education as a global ecosystem. They take into account the system's overall, experimental, environmental, social and emotional, and mediation components and stress the significance of questioning established educational paradigms and supporting the advancement of well-being as the cornerstone of the educational process.

7.2. Practical Implications

The study's practical ramifications present the education industry with a new angle. Through the integration of outside education programs into the curriculum, educational institutions can inspire students to fundamentally alter their interactions with their learning environments. This encounter with change, which grows from beautiful encounters with the natural world, can improve student performance and foster a more profound sense of intellectual curiosity. The primary focus of educational institutions should be on the well-being of its instructors. To this end, they should provide a support system that empowers educators, lowers stress, improves job satisfaction, and fosters emotional resilience. A rich ecosystem where all members thrive is promised by the cultivation of a holistic educational environment, which acknowledges the performance, mental health, and connections between the well-being of instructors and students. Professional development programs, which provide instructors with the abilities and information required to manage outdoor education and social and emotional learning successfully, are becoming an increasingly significant part of education as it transcends traditional borders. Furthermore, the establishment of an educational institution-only outdoor learning space demonstrates a dedication to experimental learning and the advancement of dynamic, outdoor learning opportunities. These locations also provide a source of inspiration for educators, which promotes the use of contemporary teaching techniques. Comprehensive stress management and mental health aid programs become required when schools are prepared to place a high priority on the well-being of their students. With the help of these programs, students may learn how to be emotionally flexible and get the self-assurance to deal with any challenges that may arise when travelling to school.

8. Limitations

This study looks at how well outdoor education works, how much students learn, and how it affects their mental health. Nonetheless, it is essential to recognize the limits of the study. There is little question that research designs cannot provide evidence for explanations, and self-reported data inevitably adds bias. Furthermore, the study disregards any contextual variations among other educational situations. These limitations will allow future research to delve further into the nuances of these relationships.

9. Future Directions

Subsequent investigations should be considered several auspicious avenues to broaden the scope of the present study. To comprehend how shifts in teachers' well-being impact students' outcomes over time, long-term study is required. The efficacy of welfare programs and techniques to enhance teacher well-being and student outcomes should be examined in intervention studies. A more thorough understanding may be achieved by identifying contextual elements, carrying out comparison research in various educational contexts, using mixed techniques, and adding more variables like socioeconomic considerations. Finding the importance of professional development and teacher training in advancing policy analysis and well-being is crucial. Future study should incorporate ethical issues and global views on teacher well-being and student results to ensure that these educational complexities are effectively incorporated into education.

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References

Ab Hamid, M. R., Sami, W., & Mohmad Sidek, M. H. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: Conference Series, 890*(1), 012163. https://doi.org/10.1088/1742-6596/890/1/012163

Abu, A. (2016). Educational Data Mining & Students' Performance Prediction. *International Journal of Advanced Computer Science and Applications, 7*(5), 212–220. https://doi.org/10.14569/ijacsa.2016.070531

Allen-craig, S. & McLeod, B. (2004). An evaluation of an experiential learning and outdoor education school program on the life effectiveness skills of middle school boys. In A. Brooks & P. Martin (Eds.), *International outdoor education research conference proceedings* (pp. 1-14). La Trobe University.

Aslan, A., & Arabacı, D. (2023). The use of Thinglink Web 2.0 Tool in out-of-school learning environments in mathematics teaching: Pre-service teachers' experiences. *Journal of Pedagogical Sociology and Psychology, 5*(3), 263-282. https://doi.org/10.33902/jpsp.202323919

Atkins, M. S., Hoagwood, K. E., Kutash, K., & Seidman, E. (2010). Toward the integration of education and mental health in schools. *Administration and Policy in Mental Health and Mental Health Services Research, 37,* 40–47. https://doi.org/10.1007/s10488-010-0299-7

Babakus, E., & Mangold, W. G. (1992). Adapting the SERVQUAL scale to hospital services : An empirical investigation. *Health Services Research, 26*(6), 767-786.

Bogner, F. X. (2002). The influence of a residential outdoor education programme to pupil's environmental perception. *European Journal of Psychology of Education, 17*, 19–34.

Branand, B., & Nakamura, J. (2017). The well - being of teachers and professors. In L. Oades, M. Steger, A. Delle Fave, & J. Passmore (Eds.), *The Wiley Blackwell handbook of the psychology of positivity and strengths-based approaches at work* (pp. 466–490). John Wiley and Sons.

Braun, T., & Dierkes, P. (2016). Connecting students to nature – how intensity of nature experience and student age influence the success of outdoor education programs. *Environmental Education Research*, *23*(7), 937–949. https://doi.org/10.1080/13504622.2016.1214866

Bullough, K. M. H. R. V, Lake, K., & Esther, M. (2014). Preschool teacher well-being : a review of the literature. *Early Childhood Education Journal, 42*, 153–162. https://doi.org/10.1007/s10643-013-0595-4

Chauhan, R. (2019). Performance of innovative teaching strategies on students. *International Journal on Integrated Education, 2*(5), 247–251. https://doi.org/10.31149/ijie.v2i5.184

Chong, W. H., Liem, G. A. D., Huan, V. S., Kit, P. L., & Ang, R. P. (2018). Student perceptions of self-efficacy and teacher support for learning in fostering youth competencies: Roles of affective and cognitive engagement. *Journal of Adolescence, 68,* 1–11. https://doi.org/10.1016/j.adolescence.2018.07.002

Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science, 1*(3), 98–101. https://doi.org/10.1111/1467-8721.ep10768783

Cook, C. R., Miller, F. G., Fiat, A., Renshaw, T., Frye, M., Joseph, G., & Decano, P. (2017). Promoting secondary teachers' well-being and intentions to implement evidence-based practices: randomized evaluation of the achiever resilience curriculum. *Psychology in the Schools, 54*(1), 13–28. https://doi.org/10.1002/pits.21980

Danielson, Samdal, A. G., O, O., J, H. J., & Wold, B. (2017). Students' perceived life satisfaction school-related social support. *The Journal of Educational Research, 102*(4), 303–318. https://doi.org/10.3200/JOER.102.4.303-320

Dogan, U. (2017). Student engagement, academic self-efficacy, and academic motivation as predictors of academic performance. *The Anthropologist, 20*(3), 553–561. https://doi.org/10.1080/09720073.2015.11891759

Dreer, B. (2021). Teachers' well-being and job satisfaction : the important role of positive emotions in the workplace of positive emotions in the workplace. *Educational Studies, 50*(1), 61–77. https://doi.org/10.1080/03055698.2021.1940872

Edwards, S. H. (2003). Improving student performance by evaluating how well students test their own programs. *ACM Journal on Educational Resources in Computing, 3*(3), 1029995. https://doi.org/10.1145/1029994.1029995

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39. https://doi.org/10.2307/3151312

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage.

Hijazi, S. T., & Naqvi, S. M. M. R. (2006). Factors affecting students' performance: A case of private colleges. *Bangladesh e-Journal of Sociology, 3*, 1-10.

Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review, 17,* 63–84. https://doi.org/10.1016/j.edurev.2015.11.002

Insorio, A. O. (2021). From the perspective of the students: Reporting counselor educators' teaching practices. *International Journal of Didactical Studies, 2*(1), 101453. https://doi.org/10.33902/IJODS.2021266616

Jennings, P. A. (2015). Early childhood teachers' well-being, mindfulness, and self-compassion in relation to classroom quality and attitudes towards challenging students. *Mindfulness, 6,* 732–743. https://doi.org/10.1007/s12671-014-0312-4

Lei, H., Cui, Y., & Chiu, M. M. (2018). The relationship between teacher support and students' academic emotions: A meta-analysis. *Frontiers in Psychology, 8,* 2288. https://doi.org/10.3389/FPSYG.2017.02288/BIBTEX

Liu, X. xian, Gong, S. Y., Zhang, H. po, Yu, Q. lei, & Zhou, Z. jin. (2021). Perceived teacher support and creative self-efficacy: The mediating roles of autonomous motivation and achievement emotions in Chinese junior high school students. *Thinking Skills and Creativity, 39,* 100752. https://doi.org/10.1016/j.tsc.2020.100752

Martin, D. P., & Rimm-Kaufman, S. E. (2015). Do student self-efficacy and teacher-student interaction quality contribute to emotional and social engagement in fifth grade math? *Journal of School Psychology, 53*(5), 359–373. https://doi.org/10.1016/j.jsp.2015.07.001

Mcleod, B., & Allen-craig, S. (2007). What outcomes are we trying to achieve in our outdoor education programs ? *Journal of Outdoor and Environmental Education, 11*(2), 41–49. https://doi.org/10.1007/BF03400856

Mindrescu, V., Simion, G., Turcu, I., Catuna, C., Paun, D. G., & Nechita, F. (2022). The multiplicative effect interaction between outdoor education activities based on the sensory system. *Sustainability, 14*(19), 11859. https://doi.org/10.3390/su141911859

Moore, L., & Anderson, R. (2014). Why schools should promote students' health and wellbeing. *BMJ, 348*, 3078. https://doi.org/10.1136/bmj.g3078

Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling. *Industrial Management & Data Systems, 116*(9), 1849–1864. https://doi.org/10.1108/IMDS-07-2015-0302

Pitzer, J., & Skinner, E. (2017). Predictors of changes in students' motivational resilience over the school year: The roles of teacher support, self-appraisals, and emotional reactivity. *International Journal of Behavioral Development, 41*(1), 15–29. https://doi.org/10.1177/0165025416642051

Price, D., & Mccallum, F. (2015). Ecological influences on teachers' well- being and "fitness". *Asia-Pacific Journal of Teacher Education, 43*(3), 195–209. https://doi.org/10.1080/1359866X.2014.932329

Sachdev, S. B. & Verma, H. V. (2004). Relative importance of service quality dimensions: a multisectoral study. *Journal of Service Research, 4*(1), 93-116.

Samsudin, S., Kamalden, T., Aziz, A., Ismail, M., & Ujang, A. F. (2019). Effectiveness of outdoor education program on physical education student resilience. *International Journal of Innovation, Creativity and Change, 9*(12), 218-229.

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy, 5*(1), 105–115. https://doi.org/10.1016/j.jfbs.2014.01.002

Shelemy, L., Harvey, K., & Waite, P. (2019). Supporting students' mental health in schools : what do teachers want and need? *Emotional and Behavioural Difficulties*, *24*(1), 100–116. https://doi.org/10.1080/13632752.2019.1582742

Sontag-padilla, L., Dunbar, M., Ye, F., Kase, C., Fein, R., Abelson, S., Seelam, R., & Stein, B. D. (2018). Strengthening college students' mental health knowledge, awareness, and helping behaviors: the impact of active minds, a peer mental health organization. *Journal of the American Academy of Child & Adolescent Psychiatry, 57*(7), 500-507. https://doi.org/10.1016/j.jaac.2018.03.019

Tang, E., & Lam, C. (2014). Building an effective online learning community (OLC) in blog-based teaching portfolios. *Internet and Higher Education, 20,* 79–85. https://doi.org/10.1016/j.iheduc.2012.12.002

Taniguchi, S. T., Freeman, P. A., Richards, A. L., Freeman, P. A., & Richards, A. L. (2007). Attributes of meaningful learning experiences in an outdoor education program. *Journal of Adventure Education and Outdoor Learning, 5*(2), 131–144. https://doi.org/10.1080/14729670585200661

Vernadakis, N., Giannousi, M., Derri, V., Michalopoulos, M. & Kioumourtzoglou, E. (2012). The impact of blended and traditional instruction in students' performance. *Procedia Technology, 1,* 439–443. https://doi.org/10.1016/j.protcy.2012.02.098

Von Ah, D., Ebert, S., Ngamvitroj, A., Park, N., & Kang, D.-H. R. (2004). Predictors of health behaviours in college students. *Journal of Advanced Nursing, 48*(5), 463–474. https://doi.org/10.1111/j.1365-2648.2004.03229.x

Yu, R., & Singh, K. (2018). Teacher support, instructional practices, student motivation, and mathematics achievement in high school. *Journal of Educational Research, 111*(1), 81–94. https://doi.org/10.1080/00220671.2016.1204260

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being : a synthesis of 40 years of research. *Review of Educational Research*, *86*(4), 981-1015. https://doi.org/10.3102/0034654315626801

Zhang, J., Yuen, M., & Chen, G. (2018). Teacher support for career development: an integrative review and research agenda. *Career Development International, 23*(2), 122–144. https://doi.org/10.1108/CDI-09-2016-0155

Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny : Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257

Zughoul, O., Momani, F., Almasri, O. H., Zaidan, A. A., Zaidan, B. B., Alsalem, M. A., Albahri, O. S., Albahri, A. S., & Hashim, M. (2018). Comprehensive insights into the criteria of student performance in various educational domains. *IEEE Access, 6,* 73245–73264. https://doi.org/10.1109/ACCESS.2018.2881282